



**PERMIT APPLICATION**  
**Wastewater Contributor**  
**Sioux City Pretreatment Program**

**Note to Signing Official:** In accordance with Title 40 of the Code of Federal Regulations Part 403 Section 403.14, information and data provided in this permit application, which identifies the nature and frequency of discharge, shall be available to the public without restriction. Requests for confidential treatment of other information shall be governed by procedures specified in 40 CFR Part 2.

**SECTION A – GENERAL INFORMATION**

1. Facility Name Big Ox Energy Siouxland LLC Federal ID No.

2. Operator Name Big Ox Energy LLC

Is The operator identified above the owner of the facility? ☒ Yes ☐ No

If no, provide the name and address of the owner and submit a copy of the contract and /or other documents indicating the operator's scope of responsibility for the facility.

**3. FACILITY ADDRESS**

1616 D. Ave South Sioux City NE 68776

Street City State Zip Jurisdiction

**4. MAILING ADDRESS (if different)**

Same as above

Street City State Zip

**5. DESIGNATED SIGNATORY AUTHORITY OF THE FACILITY:**

Attach additional information for each authorized representative:

Name Desiree McCaslen Title Regulatory Compliance Director

Address 1616 D Ave City South Sioux State NE Zip 68776

Phone 920-615-2620 Email Address dmccaslen@bigoxenergy.com

**6. DESIGNATED FACILITY CONTACT:**

Name Perry Winkler Title Plant Manager

Phone 920-615-1459 Email Address pwinckler@bigoxenergy.com

**7. DESIGNATED BILLING CONTACT:**

Name Talitha Anderson Title Accounts Payable Team Lead

Phone 920-425-7192 Email Address tanderson@boeteams.com



**PERMIT APPLICATION**  
**Wastewater Contributor**  
**Sioux City Pretreatment Program**

## SECTION B – BUSINESS ACTIVITY

1. If your facility employs or will be employing processes in any of the industrial categories or business activities listed below (regardless of whether they generate wastewater, waste, sludge or hazardous wastes) place a check beside the category of business activity (check all that apply)

### Industrial Categories\*

Airport Deicing	<input type="checkbox"/>	Aluminum Forming	<input type="checkbox"/>	Asbestos Manufacturing	<input type="checkbox"/>	Battery Manufacturing	<input type="checkbox"/>
Builders Paper and Board Mills	<input type="checkbox"/>	Carbon Black Manufacturing	<input type="checkbox"/>	Cement Manufacturing	<input type="checkbox"/>	Centralized Waste Treatment	<input type="checkbox"/>
Chemical Formulators and Packagers	<input type="checkbox"/>	Coil Coating	<input type="checkbox"/>	Copper Forming	<input type="checkbox"/>	Dairy Products Processing	<input type="checkbox"/>
Electrical and Electronic Components	<input type="checkbox"/>	Electroplating	<input type="checkbox"/>	Explosives Manufacturing	<input type="checkbox"/>	Feedlots	<input type="checkbox"/>
Ferro Alloy Manufacturing	<input type="checkbox"/>	Fertilizer Manufacturing	<input type="checkbox"/>	Canned & Preserved Fruits and Vegetables Processing	<input type="checkbox"/>	Glass Manufacturing	<input type="checkbox"/>
Grain Mills	<input type="checkbox"/>	Gum and Wood Chemicals Mfging	<input type="checkbox"/>	Hospitals	<input type="checkbox"/>	Industrial Laundries	<input type="checkbox"/>
Ink Formulating	<input type="checkbox"/>	Inorganic Chemicals Manufacturing	<input type="checkbox"/>	Iron & Steel Manufacturing	<input type="checkbox"/>	Landfills or Incinerators	<input type="checkbox"/>
Leather Tanning and Finishing	<input type="checkbox"/>	Meat Products	<input type="checkbox"/>	Metal Finishing	<input type="checkbox"/>	Metal Molding and Casting	<input type="checkbox"/>
Metal Products & Machinery	<input type="checkbox"/>	Mineral Mining & Processing	<input type="checkbox"/>	Nonferrous Metals Forming & Metal Powders	<input type="checkbox"/>	Nonferrous Metals Manufacturing	<input type="checkbox"/>
Ore Mining and Dressing	<input type="checkbox"/>	Organic Chem., Plastic & Synthetic Fibers	<input type="checkbox"/>	Paint Formulating	<input type="checkbox"/>	Paving & Roofing Materials	<input type="checkbox"/>
Petroleum Refining	<input type="checkbox"/>	Pharmaceutical Manufacturing	<input type="checkbox"/>	Phosphate Manufacturing	<input type="checkbox"/>	Photographic Processing	<input type="checkbox"/>
Plastics Molding and Forming	<input type="checkbox"/>	Porcelain Enameling	<input type="checkbox"/>	Pulp, Paper & Paper Board	<input type="checkbox"/>	Rubber Processing	<input type="checkbox"/>
Canned & Preserved Seafood Processing	<input type="checkbox"/>	Soaps and Detergents	<input type="checkbox"/>	Steam Electric Power Generation	<input type="checkbox"/>	Sugar Processing	<input type="checkbox"/>
Textile Mills	<input type="checkbox"/>	Timber Products Processing	<input type="checkbox"/>	Transportation Equipment Cleaning	<input type="checkbox"/>	Urban Stormwater	<input type="checkbox"/>

**\*Environmental Protection Agency (EPA) Categorical Pretreatment standards may apply to facilities with the processes listed above. These facilities are termed "Categorical Users"**





**PERMIT APPLICATION**  
**Wastewater Contributor**  
**Sioux City Pretreatment Program**

2. Give a brief description of all operations at this facility including primary products or services (attach additional sheets if necessary)

Anaerobic digestion of biodegradable food processing material for renewable energy generation and sale.  
Wastewater neutralization and solids separation for Centrate, industrial and sanitary wastewater.

Indicate applicable Standard Industrial Classification (SIC) for all processes: (If more than one applies, list all)

A 4952	B	C	D
--------	---	---	---

**Product Volume Estimate**

Product Produced	Past Calendar	Amounts Per Day (Daily Units)		
		Maximum	Average	Maximum
Wastewater	Jan. 1 2017 - Present	2.1 MGD	1.75 MGD	0.3 MGD

**Year Operations Began:**

2016



PERMIT APPLICATION  
Wastewater Contributor  
Sioux City Pretreatment Program

## SECTION C – WATER SUPPLY

1. Sources (check all that apply)

Private Well ☐

Surface Water ☐

Municipal Water (Specify City): South ☒ Sioux City Other (Specify): ☐

2. Name on water bill: Big OX Energy

3. Street Address on bill (Street Number, City, State, Zip): 1616 D Ave, SSC NE 68716

4. Water Service Account Number:

5. List average water usage on premises (new facilities may estimate usage)

Type	Average Water Usage (gpd)	Indicate Estimated or Measured
A. Contact cooling water		
B. Non-contact cooling water		
C. Boiler feed		
D. Process <u>Usage</u>	<u>25,000 gpd</u>	<u>Measured</u>
E. Sanitary	<u>1,000 gpd</u>	<u>Estimated</u>
F. Air pollution control <u>/Gas Skid</u>	<u>15,000 gpd</u>	<u>Metered</u>
G. Contained in product		
H. Plant and equipment wash down	<u>Process Usage</u>	
I. Irrigation and equipment wash		
J. Other (specify):		
Total of A-J	<u>41,000 gpd</u>	

## SECTION D – SEWER INFORMATION

FOR EXISTING BUSINESSES ONLY

1. Is the building presently connected to the public sanitary sewer system?

Yes



No



2. Sanitary sewer account number

Sioux City

92906-1015405

3. Have you applied for a sanitary sewer connection?

OR NEW BUSINESSES ONLY

1. Will you be occupying an existing vacant building (such as in an industrial park)?



**PERMIT APPLICATION**  
*Wastewater Contributor*  
**Sioux City Pretreatment Program**

2. Have you applied for a building permit if a new facility will be constructed?

3. Will you be connected to the public sanitary sewer system?

4. List the size, descriptive location, and flow of each facility sewer line which connects to the City's sewer system. (If needed, attach additional information on another sheet)

Sewer Size	Descriptive Location of Sewer Connection or Discharge Point	Average Flow (GPD)

## SECTION E – WASTEWATER DISCHARGE INFORMATION

1. Does (or will) this facility discharge any wastewater other than from restrooms to the city sewer

☐ No



Yes - If yes, complete the remainder of the application

2. Provide the following information on wastewater flow rate (new facilities may estimate)

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Hours/Day of discharge (e.g., 8hrs/day)	24 hr	_____	_____	_____	_____	_____	_____ →
Hours of Discharge (e.g., 9 a.m. to 5 p.m.)	24 hr	_____	_____	_____	_____	_____	_____ →





PERMIT APPLICATION  
Wastewater Contributor  
Sioux City Pretreatment Program

3. Wastewater Flowrates

Peak Per Minute (gpm)	2100 gpm by Peak Design Capacity		
Annual Average Flowrate (GPD)	1.75 MGD X effluent Discharge Volume		
Max Daily Flow Rate (GPD)	30 MGD Design Capacity		
Discharge Type	Batch <input type="checkbox"/>	Continuous <input checked="" type="checkbox"/>	Other <input type="checkbox"/>

If Batch, Provide the Following:

Number of Batch Discharges per Week	Gallons Discharged per Batch	Time of Batch Discharges (Time of Day)	Flow Rate of Discharge (GPM)

4. **Schematic Flow Diagram:** For each major activity in which wastewater is or will be generated, draw a diagram of the flow of materials, products, water, and wastewater from the start of the activity to its completion, showing all unit processes. Indicate which processes use water and generate wastestreams. Include the average daily volume and maximum daily volume of each wastestream (new facilities may estimate). If estimates are used for flow data, this must be indicated. Number each unit process having wastewater discharges to the public sewer. Use these numbers when showing the unit processes in the building layout in Section H.

Facilities that checked activities in Section B (1) may be considered a Categorical Industrial User and should proceed to question 6 in section E.

Process Schematic Attachment #1



**PERMIT APPLICATION**  
**Wastewater Contributor**  
**Sioux City Pretreatment Program**

5. For Non-Categorical Users Only: List an average wastewater discharge, maximum discharge, and type of discharge (batch, continuous, or both), for each plant process. Include the reference number from the process schematic that corresponds to each process. (New facilities should provide estimates for each discharge)

No.	Process Description	Avg Flow (GPD)	Maximum Flow (GPD)	Type of Discharge
1	GEM	1.735 MGD	3.0 MGD	Continuous
2	GAS SKID	0.015 MGD	—	Daily

Answer questions 6 and 7 only if you are subject to categorical pretreatment standards

6. For Categorical Users: Provide the totals of wastewater discharge flows of each of your processes or proposed processes. Include the reference number from the process schematic that corresponds to each process. (New facilities should provide estimates for each discharge)

No.	Regulated Process	Avg Flow (GPD)	Maximum Flow (GPD)	Type of Discharge
No.	Unregulated Process	Average Flow (GPD)	Maximum Flow (GPD)	Type of Discharge

7. For Categorical users subject to Total Toxic Organic (TTO) requirements, please provide the

	Yes	No
A. Does (or will) this facility use any of the toxic organics that are listed under the TTO standard of the applicable categorical pretreatment standards published by EPA?	<input type="checkbox"/>	<input type="checkbox"/>
B. Has a baseline monitoring report (BMR) been submitted which contains TTO information?	<input type="checkbox"/>	<input type="checkbox"/>
C. Has a toxic organics management plan (TOMP) been developed?	<input type="checkbox"/>	<input type="checkbox"/>



PERMIT APPLICATION  
Wastewater Contributor  
Sioux City Pretreatment Program

8. Do you have, or plan to have, automatic sampling equipment or continuous wastewater flow metering equipment at this facility?

Currently

Flow Metering Yes ☒ No ☐ NA ☐

Sampling Yes ☒ No ☐ NA ☐

Past

Flow Metering Yes ☐ No ☐ NA ☐

Sampling Yes ☐ No ☐ NA ☐

If so, please indicate the present or future location of this equipment on the sewer schematic and describe the equipment below:

Facility has a 4 bottle discrete flow paced effluent sampler (Isco). The flow pacing is based of the effluent flow meter. The flow meter is connected to the facility process control system for discharge data tracking.

9. Are any process changes or expansions planned during the next three years that could alter wastewater volumes or characteristics? Consider production processes as well as air or water pollution treatment processes that may affect the discharge.

Yes ☐ No ☒

(If no, continue to question 11)

10. Briefly describe these changes and their effects on the wastewater volume and characteristics:  
(Attach additional sheets if needed)

11. Are any materials or water reclamation systems in use or planned?

Yes ☐ No ☒ (If no, continue to section F)





**PERMIT APPLICATION**  
*Wastewater Contributor*  
**Sioux City Pretreatment Program**

---

**12. Briefly describe recovery process, substance recovered, percent recovered, and the concentration in the spent solution. Submit a flow diagram for each process (Attach additional sheets if needed)**

## SECTION F – CHARACTERISTICS OF DISCHARGE

**Priority Pollutant Information:** Please indicate by selecting from the check boxes below for each listed chemical whether it is "Suspected to be Absent," "Known to be Absent," "Suspected to be Present," or "Known to be Present" in your manufacturing or service activity or generated as a by-product. Some compounds are known by other names. Compounds with an asterisk (\*) indicate possible synonym listing- See Priority Pollutant synonym list in Appendix A.

Item No.	Chemical Compound	Suspected Absent	Known Absent	Suspected Present	Known Present	Item No.	Chemical Compound	Suspected Absent	Known Absent	Suspected Present	Known Present
1.	Asbestos (fibrous)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	66.	1,2-dichloroethane*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Cyanide (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	67.	1,1-dichloroethene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Antimony (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	68.	Trans-1,2-dichloroethene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Arsenic (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	69.	2,4-dichlorophenol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Beryllium (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	70.	1,2-dichloropropane*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Cadmium (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	71.	(cis & trans) 1,3-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Chromium (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	72.	Dieldrin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Copper (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	73.	Diethyl phthalate*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Lead (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	74.	2,4-dimethylphenol*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Mercury (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	75.	Dimethyl phthalate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Nickel (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	76.	Di-n-butyl phthalate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Selenium (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	77.	Di-n-octyl phthalate*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	Silver (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	78.	4,6-dinitro-2-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	Thallium (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	79.	2,4-dinitrophenol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	Zinc (total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	80.	2,4-dinitrotoluene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	Acenaphthene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	81.	2,6-dinitrotoluene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	Acenaphthylene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	82.	1,2-diphenylhydrazine*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	Acrolein	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	83.	Endosulfan 1*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	Acrylonitrile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	84.	Endosulfan 11*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.	Aldrin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	85.	Endosulfan sulfate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.	Anthracene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	86.	Endrin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22.	Benzene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	87.	Endrin aldehyde	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.	Benzidine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	88.	Ethylbenzene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.	Benzo (a) anthracene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	89.	Fluoranthene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25.	Benzo (a) pyrene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	90.	Fluorene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26.	Benzo (b) fluoranthene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	91.	Heptachlor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27.	Benzo (g,h,i) perylene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	92.	Heptachlor epoxide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





# PERMIT APPLICATION

## Wastewater Contributor

### Sioux City Pretreatment Program

28.	Benzo (k) fluoranthene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	93.	Hexachlorobenzene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.	a-BHC (alpha)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	94.	Hexachlorobutadiene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30.	b-BHC (beta)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	95.	Hexachlorocyclopentadiene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31.	d-BHC (delta)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	96.	Hexachloroethane*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.	g-BHC (gamma)*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	97.	Indeno (1,2,3-cd) pyrene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33.	Bis (2-chloroethyl) ether*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	98.	Isophorone*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34.	Bis (2-chloroethoxy) methane*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	99.	Methylene chloride*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35.	Bis (2-chloroisopropyl) ether*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	100.	Naphthalene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36.	Bis (chloromethyl) ether*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	101.	Nitrobenzene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37.	Bis (2-ethylhexyl) phthalate*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	102.	2-nitrophenol*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38.	Bromodichloromethane *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	103.	4-nitrophenol*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39.	Bromoform*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	104.	N-nitrosodimethylamine*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40.	Bromomethane*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	105.	N-nitroso-di-n-propylamine*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41.	4-bromophenylphenyl ether	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	106.	N-nitrosodiphenylamine*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42.	Butylbenzyl phthalate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	107.	PCB-1016*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43.	Carbon tetrachloride*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	108.	PCB-1221*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44.	Chlordane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	109.	PCB-1232*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45.	4-chloro-3-methylphenol*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	110.	PCB-1242*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46.	Chlorobenzene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	111.	PCB-1248*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47.	Chloroethane*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	112.	PCB-1254*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48.	2-chloroethylvinyl ether	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	113.	PCB-1260*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49.	Chloroform*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	114.	Pentachlorophenol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50.	Chloromethane*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	115.	Phenanthrene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51.	2-chloronaphthalene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	116.	Phenol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52.	2-chlorophenol*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	117.	Pyrene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53.	4-chlorophenylphenyl ether	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	118.	2,3,7,8-tetrachlorodibenzo- p-dioxin*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54.	Chrysene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	119.	1,1,2,2-tetrachloroethane*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55.	4,4 - DDD*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	120.	Tetrachloroethene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56.	4,4 - DDE*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	121.	Toluene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57.	4,4 - DDT*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	122.	Toxaphene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58.	Dibenzo (a,h) anthracene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	123.	1,2,4-trichlorobenzene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59.	Dibromochloromethane *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	124.	1,1,1-trichloroethane*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60.	1,2-dichlorobenzene*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	125.	1,1,2-trichloroethane*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



For each of the chemical compounds which are indicated to be "Known Present," please list and provide the following data for each: (attach additional sheets if needed)

12 of 20





PERMIT APPLICATION  
Wastewater Contributor  
Sioux City Pretreatment Program

## SECTION G - TREATMENT

1. Is any form of wastewater treatment (see full list below) practiced at this Yes ☒ No ☐
2. Is any form of wastewater treatment (or changes to an existing wastewater treatment) planned for this facility within the next three years? (describe below) Yes ☐ No ☒

3. Treatment devices or processes used or proposed for treating wastewater or sludge (check as many as appropriate):

Air flotation	<input checked="" type="checkbox"/>	Cyclone	<input type="checkbox"/>	Grinding filter	<input type="checkbox"/>	Sedimentation	<input type="checkbox"/>	Solvent	<input type="checkbox"/>
Centrifuge	<input type="checkbox"/>	Filtration	<input type="checkbox"/>	Grit removal	<input type="checkbox"/>	Screen	<input checked="" type="checkbox"/>	Spill	<input type="checkbox"/>
Chemical precipitation	<input checked="" type="checkbox"/>	Flow equalization	<input checked="" type="checkbox"/>	Ion exchange	<input type="checkbox"/>	Reverse osmosis	<input type="checkbox"/>	Sump	<input type="checkbox"/>
Chlorination	<input type="checkbox"/>	Grease trap	<input type="checkbox"/>	Ozonation	<input type="checkbox"/>	Septic tank	<input type="checkbox"/>		

Rainwater diversion or storage ☐

Neutralization, pH correction ☐

Grease or oil separation (list type)

Biological treatment (list type)

Other physical treatment (list type) GEM

Other chemical treatment (list type)

Other (list type)

4. Describe the pollutant loadings, flow rates, design capacity, physical size, and operating procedures for each treatment facility checked above (attach additional sheets if necessary)

Rotary screen fed by a flow EQ tank through Chemical dosing prior to GEM. Max Flow 3.0 MGD.

5. Attach a process flow diagram for each existing treatment system. Include process equipment, by-products, by-product disposal method, waste and by-product volumes,

6. Describe any changes in treatment or disposal methods planned or under construction for the wastewater discharge to the City of Sioux City sanitary sewer. Please include estimated completion dates

5. Process flow diagram - Attachment #2



PERMIT APPLICATION  
Wastewater Contributor  
Sioux City Pretreatment Program

7. Do you have a wastewater treatment operator?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>				
Operator Name	Certificate Number	Phone	Email				
Desiree McCaslen	FA - 8659						
Specify Operating Hours	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Pretreatment System	24 hr						→
No. of Full Time Staff	33						→
No. of Part Time Staff	0						→
Do you have a written manual on the correct operation of your treatment equipment?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>				
Do you have a written maintenance schedule for your treatment equipment?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>				

## SECTION H – FACILITY OPERATIONAL CHARACTERISTICS

### 1. Shift Information

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Work days	X	X	X	X	X	X	X
Shifts per work day	2	2	2	2	2	2	2
Employees per shift	1 <sup>st</sup>	14	14	14	14	8	8
	2 <sup>nd</sup>	8	8	8	8	8	8
	3 <sup>rd</sup>						
Shift start and end time	1 <sup>st</sup>	6AM-6 PM					→
	2 <sup>nd</sup>	6PM-6AM					→
	3 <sup>rd</sup>						

Please explain any seasonal variations to the discharge or typical shut-down times:





**PERMIT APPLICATION**  
**Wastewater Contributor**  
**Sioux City Pretreatment Program**

2. List types and amounts (mass or volume per day) of raw materials used or planned for use (attach list if needed)

3. List type and quantity of chemicals used or planned for use (attach list if needed)

INCLUDE COPIES OF ALL MATERIAL SAFETY DATA SHEETS FOR ALL CHEMICALS IDENTIFIED

Chemical	Quantity (inc. units)	Potential to Discharge to Sewer (Y or N)
Muriatic Acid	2- 275 gallon totes	No - Internal Processing
Sodium Hydroxide	2- 275 gallon totes	No - Internal Processing
Ferric Chloride	12000 Bulk Tank	External Tank
Anionic Polymer	~ 500 gallon make up	NO - Internal processing
Cationic Polymer	~ 500 gallon make up	NO - Internal processing
Hydraulic oil	55-gallon or consumer	NO - Internal processing
Cleaning chemicals	Consumer size	NO - Internal processing
Lab chemicals	Consumer size	NO - Internal processing

4. **Building Layout** – Include a scale map or drawing of the location of each building on the premises. Show map orientation and location of all water meters, storm drains, numbered unit processes (from schematic flow diagram), public sewers, and each facility sewer line connected to the City of Sioux City sewer. Number each sewer and show existing and proposed sampling locations. A blueprint or drawing of the facilities showing the above items may be attached in lieu of submitting a drawing on this sheet.

Attachment # 3A ÷ 3B



PERMIT APPLICATION  
Wastewater Contributor  
Sioux City Pretreatment Program

## SECTION I – SPILL PREVENTION

1. Do you have chemical storage containers, tanks, vessels, etc. at your facility?

Yes

☒

No

☐

2. If yes, include all raw products, waste products, chemicals, cleaning supplies, etc. stored on-site in quantities greater than 10 gallons for liquids or 50 lbs for solids. Indicate if additional sheets are attached.

Product/Item Stored	Maximum Quantity Stored (Include Units)	Location and Container Type	Floor Drains in Vicinity
Muriatic Acid	525 gallons	Internal / Totes	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Sodium hydroxide	525 gallons	Internal / Totes	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Ferric Chloride	12,000 gallon	External / Tank	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Anionic Polymer	~500 gallon	Internal / Tank	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Cationic Polymer	~500 gallon	Internal / Tank	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

If yes was answered above in Section 2 please fill in Question 4 below

4. Where do they discharge to?

Plant return wetwell for neutralization and treatment (GEM)

5. If you have chemical storage containers, tanks, vessels, etc. in the manufacturing area, could an accidental spill lead to a discharge to (check all that apply)

An onsite disposal system

☐

Storm drain

☐

Sanitary sewer system

☐

N/A, No possible discharge to any To ground

☐

(e.g. through a floor drain)

Other

6. Do you have an accidental spill prevention plan, Slug Control Plan, or SPCC plan to prevent spills of chemicals or sludge discharges from entering the wastewater or storm collection systems?

Yes ☒

No ☐

Yes (please enclose copies with application)-

Slug Control Plan required within 90 days of issuance of permit

7. Please describe below any previous spill events (within last three years) and remedial measures taken to prevent their reoccurrence





PERMIT APPLICATION  
Wastewater Contributor  
Sioux City Pretreatment Program

SECTION J – NON-DISCHARGED WASTES

1. Are any waste liquids or sludge materials generated and not disposed of in the sanitary sewer system?

Waste Generated	Quantity (Per Year)	Disposal Method
Digester Sludge	46 tons / day	Recycled / Landfill

2. Indicate which wastes identified above are disposed of at an off-site facility and which are disposed of on-site Digester Sludge off site.

3. If any of your wastes are sent to an off-site centralized waste treatment facility, identify the waste and the facility:

4. If an outside firm removes any of the above listed wastes, state the name(s) and address(es) of all waste haulers

Name	Address	Permit No.
Gill Hauling	1364 US20, Jackson, NE	

5. Have you been issued any Federal, State, or local environmental permits?  
If yes, please list below

Yes



No



Permit Type/Description	Number	Permitting Entity
Stormwater Permit	NER910002	NDEQ
Air Emissions Permit	CP15008	NDEQ



**PERMIT APPLICATION**  
*Wastewater Contributor*  
**Sioux City Pretreatment Program**

## SECTION L – AUTHORIZED SIGNATURES

### 1. Compliance Certification

2. Are all applicable Federal, State, or local pretreatment standards and requirements being met on a consistent basis?

Yes ☒ No (if no answer question below) ☐ Not Yet Discharging ☐

3. What additional operations and maintenance procedures are being considered to bring the facility into compliance? Also, list additional treatment technology or practice being considered in order to bring the facility into compliance

4. Provide a schedule for bringing the facility into compliance. Specify major events planned along with reasonable completion dates. Note that if the City of Sioux City issues a permit to the applicant, it may establish a schedule for compliance different from the one submitted by the

Milestone Activity	Completion Date





PERMIT APPLICATION  
Wastewater Contributor  
Sioux City Pretreatment Program

**5. Authorized Representative Certification Statement**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Desiree

First Name

Regulatory Compliance Director

Title

Desiree McCaslen

Signature

McCaslen

Last Name

8/29/17

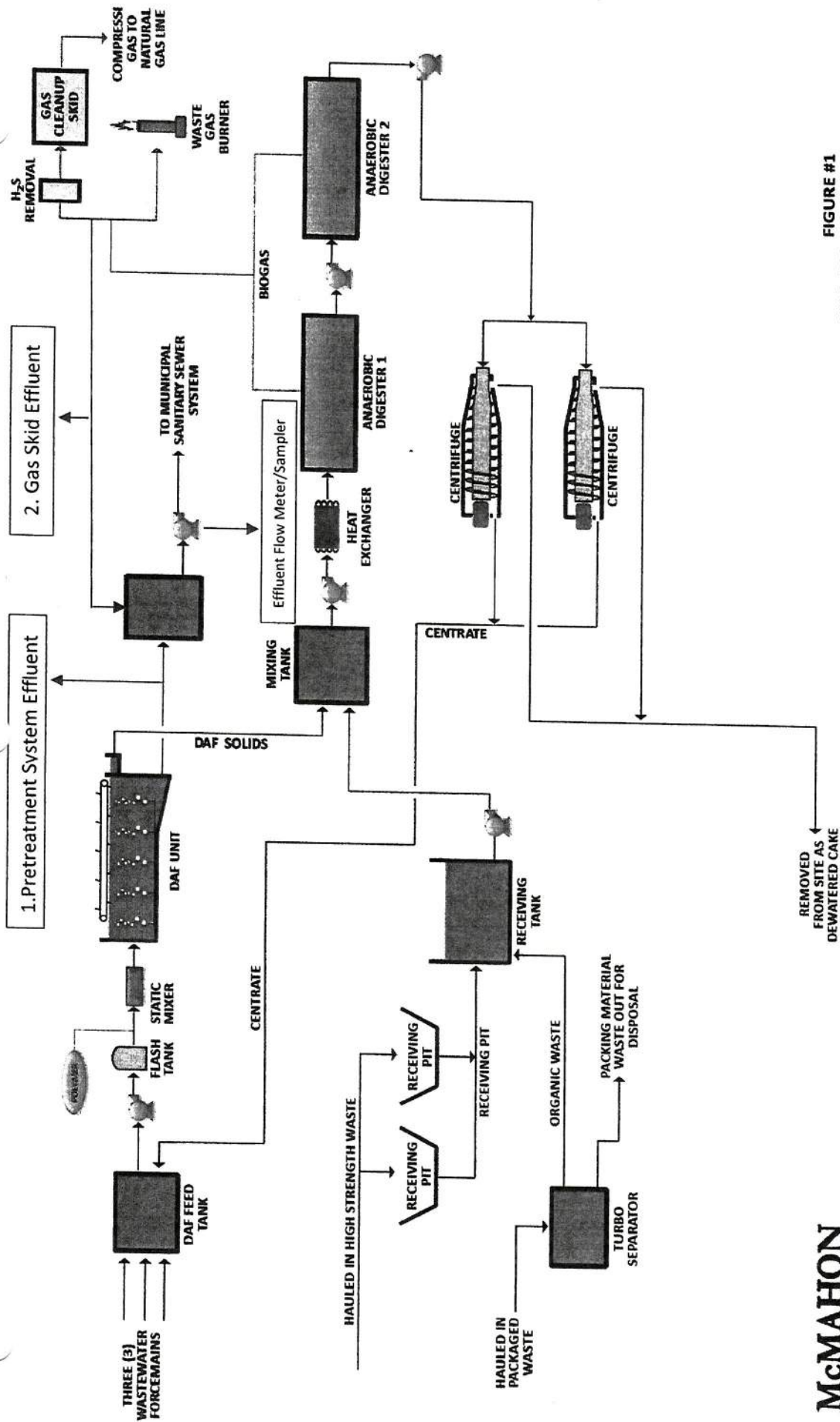
Date

# APPENDIX A- PRIORITY POLLUTANT SYNONYM LISTING

Chemical Compound	Synonym
Asbestos	Actinolite, Amosite, Antophyllite, Chrysotile, Crocidolite, Tremolite
Cyanide	Hydrogen Cyanide, Potassium Cyanide, Sodium Cyanide
Antimony	Stibium
Arsenic	Arsenia
Beryllium	Glucinium
Lead	Plumbum
Mercury	Hydargyrum; Liquid Silver, Quick Silver
Silver	Argentum
Acenaphthene	1,2-Dihydroacenoaphthylene; Periethylenenaphthalene; 1,8-Ethylenenaphthalene
Acrolein	2-Propenal; Propenal; Allyl aldehyde, Acraldehyde; Acrylaldehyde, Acrylic aldehyde, Aqualin
Acrylonitrile	2-Propenenitrile; Propenenitrile, Vinyl cyanide, Cyanoethylene; Acrilet; Fumigrain; Ventox; Acrylonitrile monomer
Aldrin	1,2,3,4,10, 10-Hexachloro- 1,4,4a,5,8,8a-Hexahydro-1,4:5,8-Dimethanonaphthalene; HHDN; Compound 118; Octalene
Benzene	Benzol; Cyclohexatriene, Phenyl hydride
Benzidine	4,4'-Bianiline; 4,4'-Biphenyldiamine; 1,1'- Biphenyl-4,4'-diamine; 4,4'-Diaminobiphenyl; p-Diaminodiphenyl
Benzo(a)anthracene	1,2-Benzanthracene, 2,3- Benzphenanthrene
Benzo(a)pyrene	3,4-Benzopyrene
Benzo(b)fluoranthene	2,3-Benzfluoranthene 2,3-Benzofluoranthene 3,4-Benz(e)acephenathylene 3,4-Benzfluoranthene 3,4-Benzofluoranthene Benz(e)fluoranthene
Benzo(g,h,i)perylene	1,12-Benzoperylene
Benzo(k)fluoranthene	1,1,12-Benzofluoranthene
g-BHC (gamma)	Lindane
bis(2-chlorethoxl) methane	2,2'-Dichlorethyl ether
Dichlorodifluoromethane	Difluorodichloromethane, Fluorocarbon-12
1,1'-dichloroethane	Ethylidene chloride
1,2-dichloroethane	Ethylene chloride, Ethylene dichloride
1,1-dichloroethane	1,1-Dichloroethylene
trans-1,2-dichloroethene	Acetylene dichloride
1,2-dichloropropane	Propylene dichloride
(cis & trans) 1,3- dichloropropane	(cis & trans) 1,3 Dichloropropylene
Diethylphthalate	Ethyl phthalate
2,4-dimethylphenol	2,4-zylenol
di-n-octyl phthalate	Di(2-ethylhexyl)phthalate
4,6-dinitro-2- methylphenol	4,6-Dinitro-octyl-cresol
1,2-diphenylhydrazine	Hydrazobenzene
Endosulfan I	a-Endosulfan-alpha
Endosulfan II	b-Endosulfan-beta
Fluorene	(alpha)-Diphenylene methane
Hexachlorbenzene	Perchlorobenzene
Hexachlorcyclopentadiene	Perchlorocyclopentadiene
Hexachloroethane	Perchloroethane
indeno-(1,3,3-cd) pyrene	2,3-ortho-Phenylene pyrene
Isophorone	3,5,5-Trimethyl-2- Cyclohexene-1-one
Methylene chloride	Dichloromethane

Chemical Compound	Synonym
bis(2-chloroisopropyl) ether	2,2'-Dichloroisopropyl ether
bis(chloromethyl) ether	(sym) Dichloromethyl ether
bis(2-ethylhexyl) phthalate	2,2'-Diethylhexyl phthalate
Bromodichloromethane	Dichlorobromomethane
Bromoform	Tribromomethane
Bromomethane	Methyl bromide
carbon tetrachloride	Tetrachloromethane
4-chloro-3-methylphenol	Para-chloro-meta-cresol
chloromethane	Ethylchloride
chloroform	Trichloromethane
chloromethane	Methyl chloride
2-chlorophenol	Para-chlorophenol
Chrysene	1,2-Benzphenanthrene
4,4'-DDD	Dichlorodiphenyldichloroethane, p,p'-dde, Tetrachlorodiphenylethane
4,4'-DDE	Dichlorodiphenyldichloroethylene
4,4'-DDT	Dichlorodiphenyltrichloroethane
Dibenzo(a,h)anthracene	1,2,5,6-dibenzanthracene
Dibromochloromethane	Chlorodibromomethane
1,2-dichlorobenzene	Ortho-dichlorobenzene
1,2-dichlorobenzene	Meta-dichlorobenzene
1,4-dichlorobenzene	Para-dichlorobenzene
2-nitrophenyl	Para-nitrophenyl
4-nitrophenyl	Ortho-nitrophenyl
N-nitrosodimethylamine	Dimethylnitrosoamine
N-nitrosodi-n- propylamine	n-Nitro-di-n-propylamine
N-nitrosodiphenylamine	Diphenyl-nitrosoamine
PCP-1018	Arochlor-1018
PCB-1221	Arochlor-1221
PCB-1232	Arochlor-1232
PCB-1242	Arochlor-1242
PCB-1248	Arochlor-1248
PCB-1254	Arochlor-1254
PCB-1260	Arochlor-1260
2,3,7,8-tetrachlorodibenzo-p- dioxin	TCDD
1,1,2,2-tetrachloroethene	Acetylene tetrachloride
Tetrachloroethene	Perchloroethylene, Tetrachloroethylene
Toluene	Methylbenzene toluol
1,1,1-trichloroethane	Methyl chloroform
1,1,2-trichloroethane	Vinyl trichloride
Trichloroethane	Trichloroethylene
Trichlorofluoromethane	Fluorocarbon-11; Fluorotrichloromethane
Vinyl chloride	Chloroethene; Chloroethylene



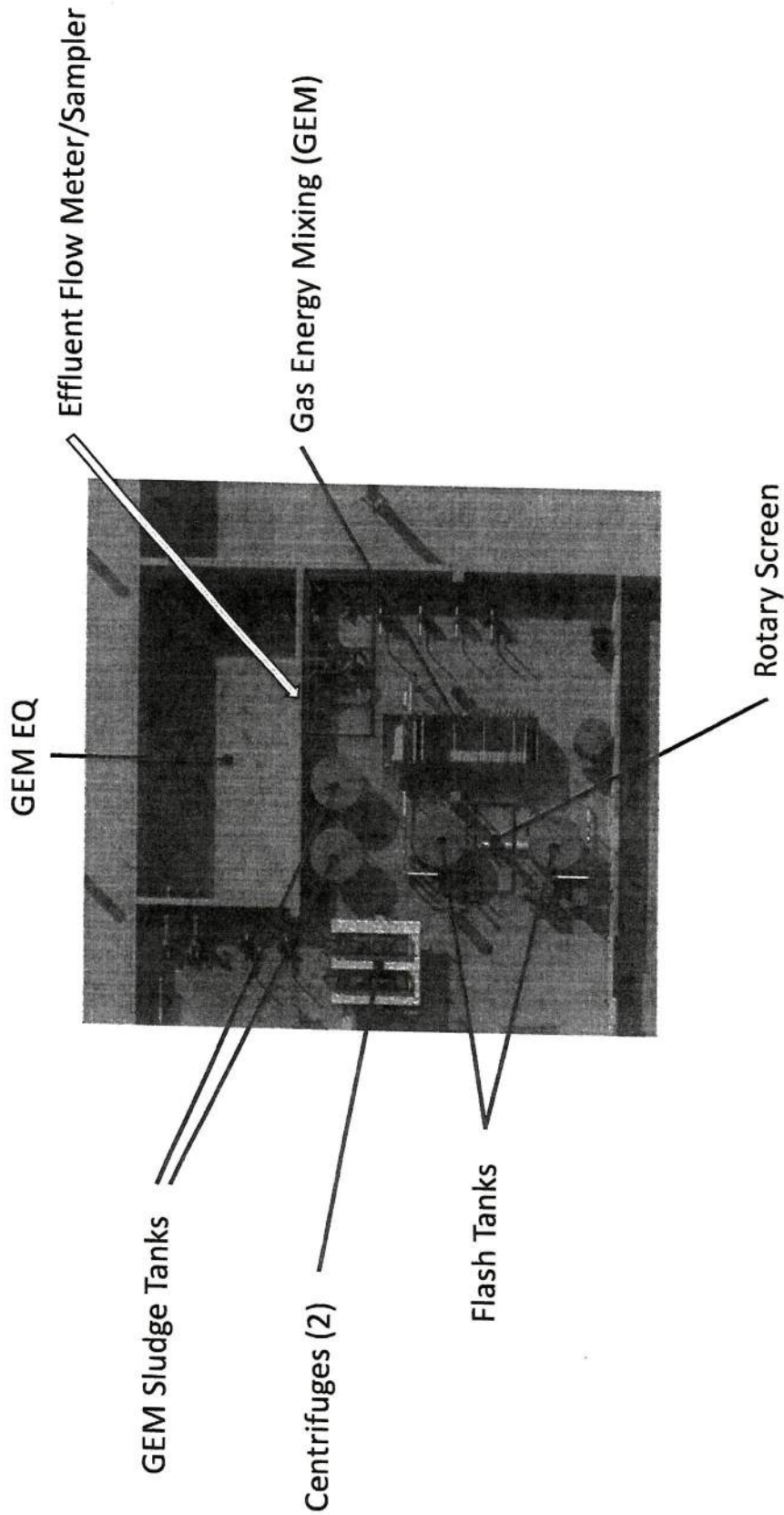


**FIGURE #1**  
**PROCESS FLOW DIAGRAM**  
**BIG OX ENERGY, INC. - SIOUXLAND PROJECT**  
 MCM #B31076-9-50.180 3/30/2015  
 © 1997-2015 MCM VOLUME OF ENERGY SOLUTIONS-PROCESS FLOW DIAGRAM PPTX 0366.m





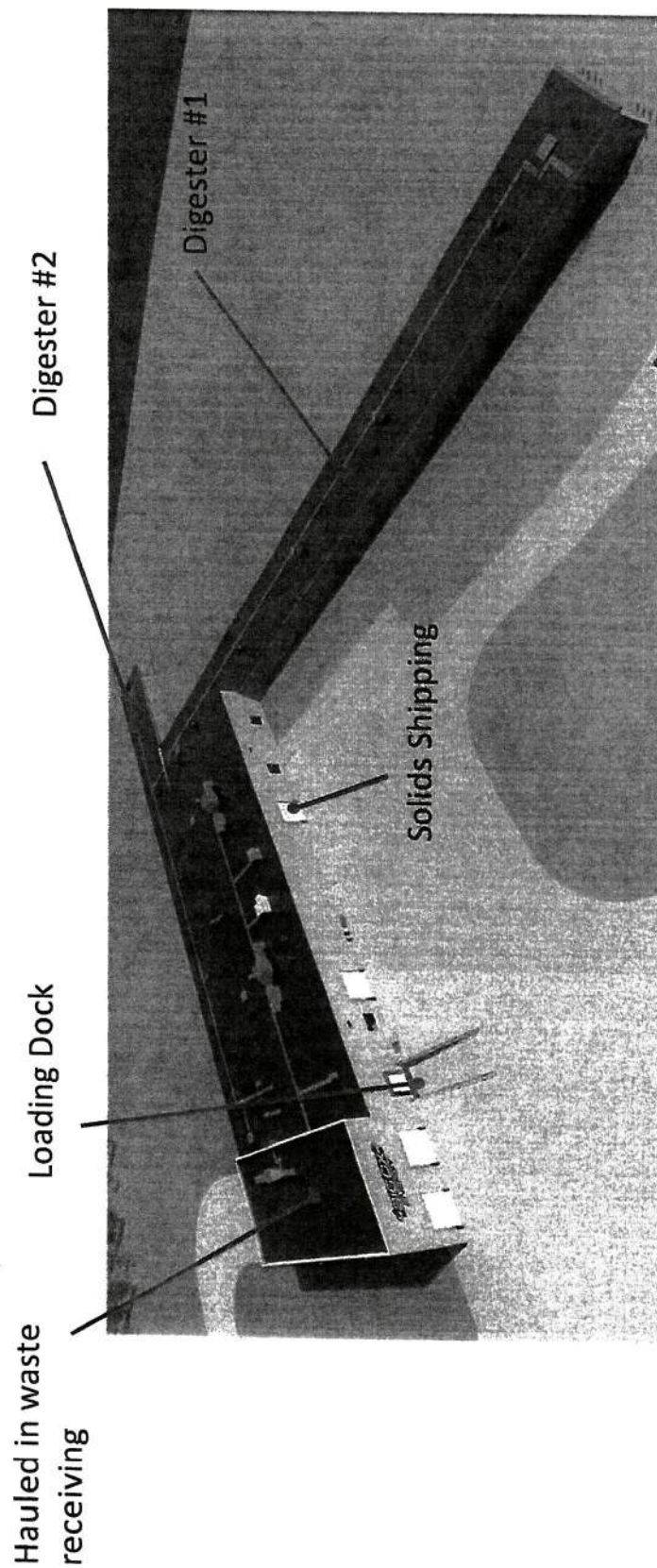
Attachment #2-Effluent Processing





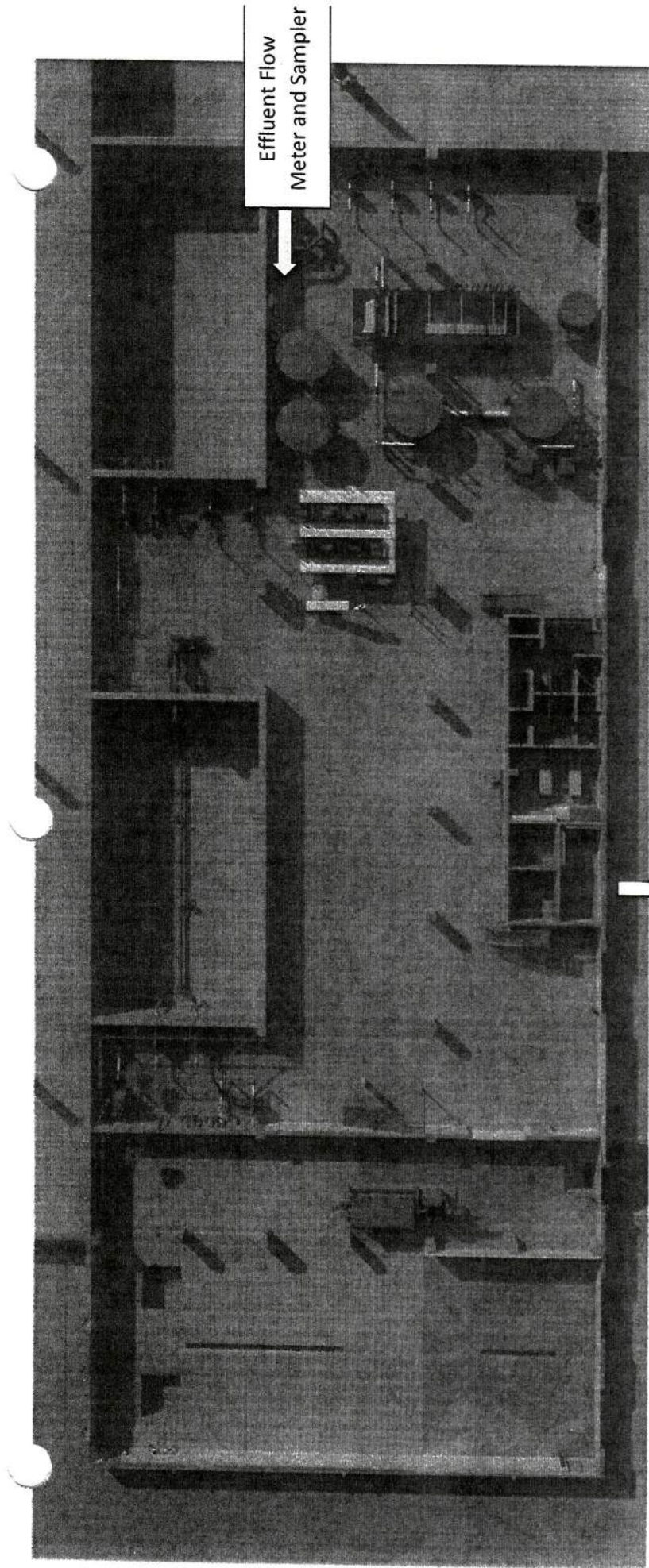


# Attachment #3A-Facility Overview









Attachment #3B-Inside Facility Overview

